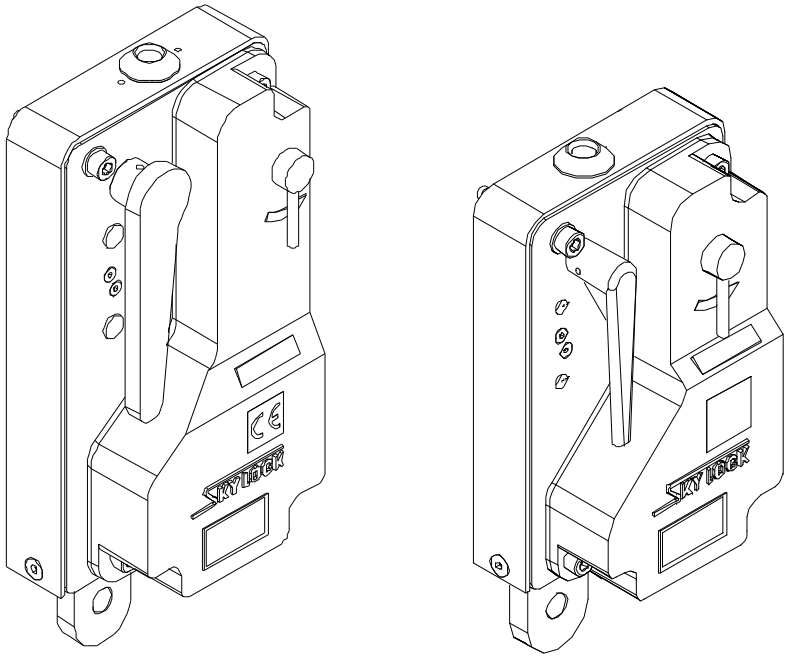
SKY CLIMBER

"Access Innovations Since 1955"

User Manual



CE SKY LOCK

Overspeed Fall Arrest Device

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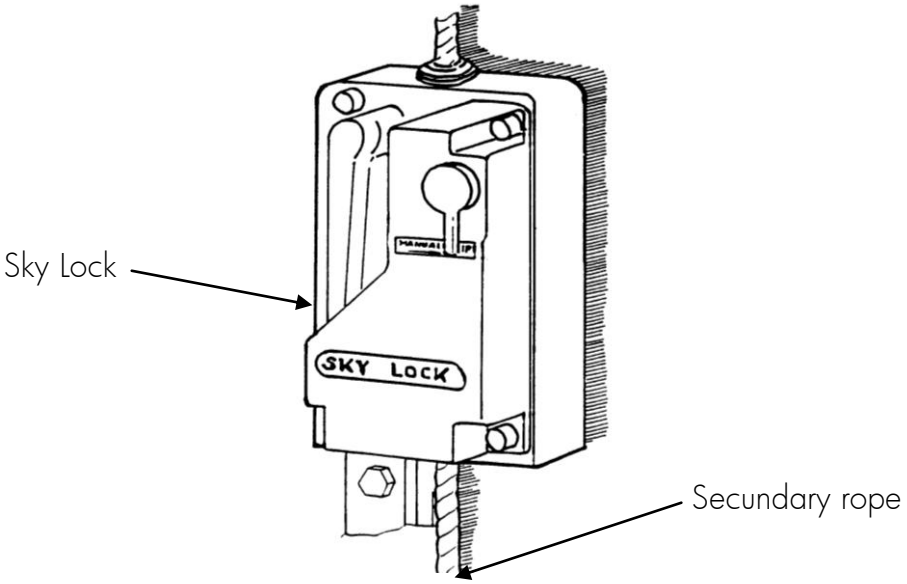
Definition and purpose

The Sky Lock overspeed brake provides additional backup to the safety devices built into the Sky Climber hoist. The Sky Lock is a device which senses the dynamic speed of the wire rope as it passes through the Sky Lock mechanism.

If, as the Sky Lock brake is travelling down the wire rope, the factory pre-set speed is exceeded, the Sky Lock brake will lock onto the wire rope and support the load.

The secondary steel wire rope cannot be released until the load on the Sky Lock brake is relieved.



Work environment and conditions of use

The Sky Lock overspeed brake will be used in numerous adverse environmental conditions. These adverse conditions with recommended precautionary measures may be grouped as follows:

<u>GROUP 1 - NORMAL (+0 °C and above, day/night)</u>

A "Normal Work Environment" includes inspection operations, light maintenance, and window washing.

In this environment the only contaminant that would be expected to be deposited in the Sky Lock brake is lubricant from the support cable.

Inspection/functional check should be conducted by the operator on a daily basis. However, if any of the adverse conditions identified below in Group 2, "Contaminated Work Environment", are

present in close proximity to operations identified in Group 1, the precautions noted in Group 2 should be followed.

GROUP 2 - CONTAMINATED (+0 °C and above, day/night)

A "Contaminated work environment" can be identified as one in which one or more of the following categories of contaminants are used or are in close proximity to the operation:

Category A:
Abrasive Material (e.g., sand, grit, dust, welding, etc.)

Category B:
Caustic Material (e.g., corrosive chemicals, salty environment, acids or fumes, etc.)

Category C:
Adhesive Material (e.g., cement, plaster, paint, caulking, compound, etc.)

In such work environments, every effort must be made to prevent entry of contaminants into the Sky Lock brake. Recommended minimum precautions for equipment protection are:

1) Cover the wire support cable above and below the Sky Climber Hoist for a distance of +/- 1.5m in each direction. A length of rubber hose taped in place is adequate to serve this function. If a wire winder is used, the guide tube will substitute for the rubber hose below the Sky Climber hoist.

2) Cover the wire winder with clear plastic covers.

3) Do not use contaminated wire rope.

For a work environment with contaminants in either Category A or B, daily inspections/functional checks by the operator should be conducted at the beginning of each work shift.

For a work environment with contaminants in Category C, inspection/functional checks must be conducted by the operator at the beginning of each work shift and every four hours thereafter. This is based upon the fact that the majority of adhesive materials such as cement or plaster will set up hard in four to eight hours; If the adhesive material being used has a faster setup time, the frequency of the inspections/functional checks shall be increased accordingly.

GROUP 3 - FREEZING (0° C and below day/night)

Temperature of 0° C and below without the presence of moisture do not adversely affect the Sky Lock brake. However, if the work environment of either Group 1 or 2 changes to include freezing temperature and sufficient moisture to form ice inside the Sky Lock brake, there is a possibility that the unit will fail to function as intended, with resultant potential danger to the user.

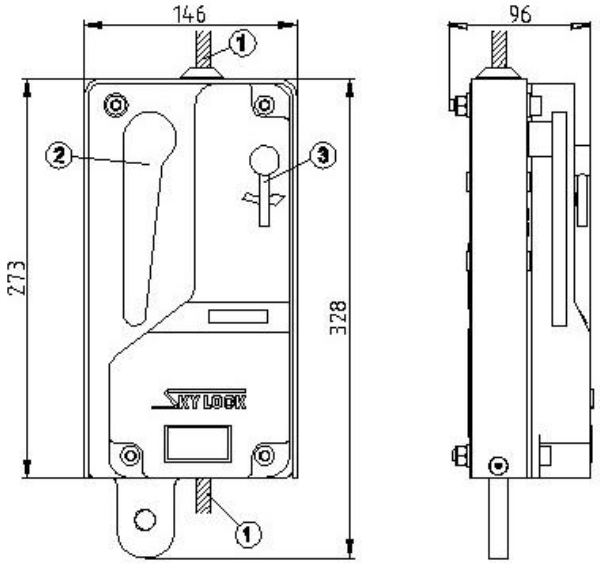
Under these circumstances the operator must take reasonable precautions to prevent moisture from entering the Sky Lock brake. To ensure that the unit is functioning properly, it should be inspected/functionally checked at the beginning of each work shift and a minimum of every two hours thereafter during the course of the workday. Should the Sky Lock brake malfunction when being inspected, it can be assumed that the unit is frozen. The Sky Lock overspeed brake should be thawed out of the Sky Lock brake with pressurized dry air.

WARNING: When using compressed air, be sure to wear safety glasses.

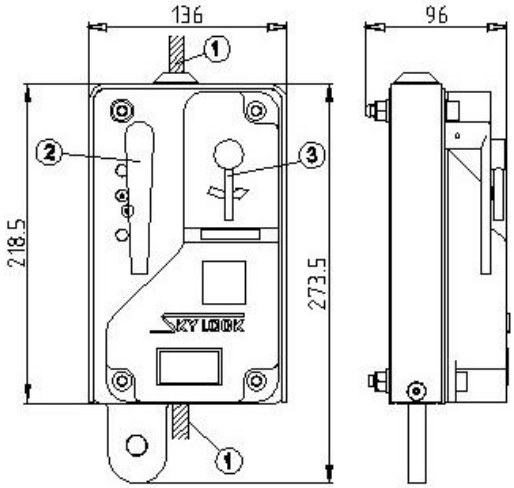
Then pour approximately 1 cup of alcohol into the entrance guide of the Sky Lock brake. This procedure should clear the moisture from the inside of the Sky Lock brake and return it to a condition which will not be adversely affected by below freezing temperature, unless subjected to additional moisture. To confirm continued acceptable operation, the Sky Lock brake must be inspected and functionally checked every two hours as noted above.

General view and dimensions

Sky Lock Type II



Sky Lock Type III



1. Secundary rope
2. Reset handle
3. Manual trip lever

Sky Lock Type II versions	Sky Lock Type III versions
Sky Lock II 9mm	Sky Lock III 8mm
Sky Lock II 9mm DS	Sky Lock III 8mm DS
Sky Lock II 10 mm	Sky Lock III 9mm
Sky Lock II 10mm DS	

To choose the right type of Sky Lock according to the hoist type that you use, use the Sky Lock selection table (see further in this manual)

Steel Wire Rope

Always use a Sky Climber type of steel wire rope of the correct diameter, construction and length, according to the hoist type that you use.

WARNING: Use of wire rope obtained from sources other than Sky Climber could result in serious personal injury and/or property damage.

Steel Wire Rope for Compact & CX500 Series

Steel wire rope 8 mm with steel core:

Rope (Partnr. 51008304) is in accordance with ISO 2408 and NBN 04-001. Diameter of rope is 8 mm.

Steel wire rope 8mm with polyprop core

Rope (Partnr. 51008305) is in accordance with ISO 2408 and NBN 04-001 and correspond the following specifications:

- Diameter of rope 8.4mm
- Tolerance : -0.02 +0.00
- Type and construction 5x26WSR, right hand, regular lay, preformed, with polyprop core
- Surface finish of the wires Galvanised
- Tensile strenght 2160N/mm^2
- Theoretical breaking load 64.6kN
- Actual breaking load 51.5kN
- Lubrification slightly greased
- Wind mill application NA19-200

The rope is delivered slightly lubricated and must be kept slightly lubricated at all times. If necessary, distribute a few drops of motor oil (for example 10W40) every 2 meter , with a rag.

Steel wire rope for Alpha 500 and 800

The steel wire rope (partn° 51008301) is conform to the ISO 2408 and the NBN 04-001 standards and in accordance with the following specifications:

Rope diameter	9mm
Construction	4x36WS, polyprop core
Type and direction of lay	Right hand, regular lay, preformed
Surface finish of the wires	Galvanised
Tensile strength	2160N/mm^2
Minimum breaking load	78,5kN
Actual breaking load	66.1kN
Lubrication	Lightly greased

Steel wire rope for Alpha 1000 (all types)

The steel wire rope (partn° 51008302) is conform to the ISO 2408 and the NBN 04-001 standards and in accordance with the following specifications:

Rope diameter	10,2mm
Construction	5x19W, polyprop core
Type and direction of lay	Right hand, regular lay, preformed
Surface finish of the wires	Galvanised
Tensile strength	2160N/mm^2
Minimum breaking load	78,2kN

The rope is delivered slightly grease and must be kept slightly greased at all times (type of grease is Nyrosten TS5-13-20510).

Sky Lock selection table

Sky Lock overspeed devices exist in several versions according to the rope diameter (8, 9 or 10.2 mm after the hoist type) and the nominal speed of the hoist (single speed 8.5 m/min or double speed 17 m/min).

The right type of Sky Lock should be used with the right type of hoist.

To choose the right type of Sky Lock, you can use the selection table below.

Sky Lock selection table:

Hoist	Sky Lock II 9mm	Sky Lock II 9mm DS	Sky Lock II 10 mm	Sky Lock II 10mm DS	Sky Lock III 8mm	Sky Lock III 8mm DS	Sky Lock III 9mm
Alpha 500							●
Alpha 800	●						
Alpha 800 DS		●					
Alpha 1000 S			●				
Alpha 1000 S DS				●			
Compact 400 S					●		
Compact 400 S DS						●	
Compact 400 S DSGB						●	
CX 500 S					●		
CX 500 S DS						●	
CX 500 GSDM						●	
CX 500 S DSGB						●	
CX 500 S GDS						●	
FNX	Sky Lock funtions are included in the hoist						
LNX							
Alpha 500 Air							●
Alpha 800 Air	●						
Compact 400 S Air					●		
CX 500 S Air					●		

Sky Lock installation

A Sky Lock overspeed device can be mounted in 3 different ways:

1. Hoist mounted
2. End stirrup mounted
3. Walk through stirrup mounted

For a detailed part list of the Sky Lock support assemblies, please read the specific Part list & Maintenance Manual of the Sky Lock type that you use.

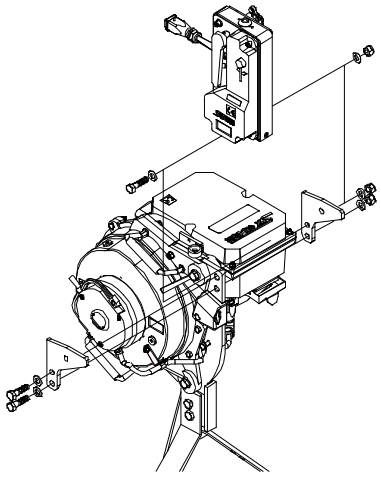


Fig.: 99000000-f10

Sky Lock, hoist mounted (example)

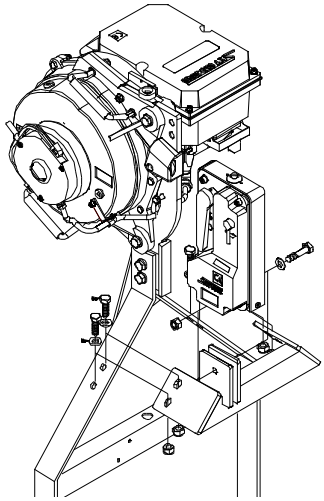


Fig.: 99000000-f11

Sky Lock, end stirrup mounted (example)

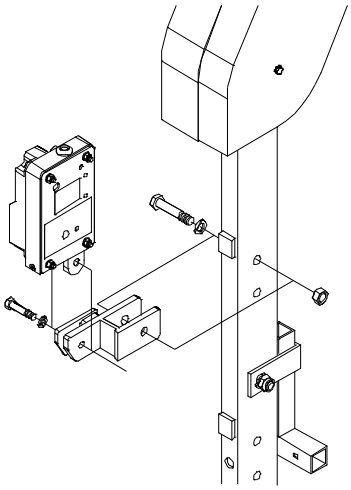
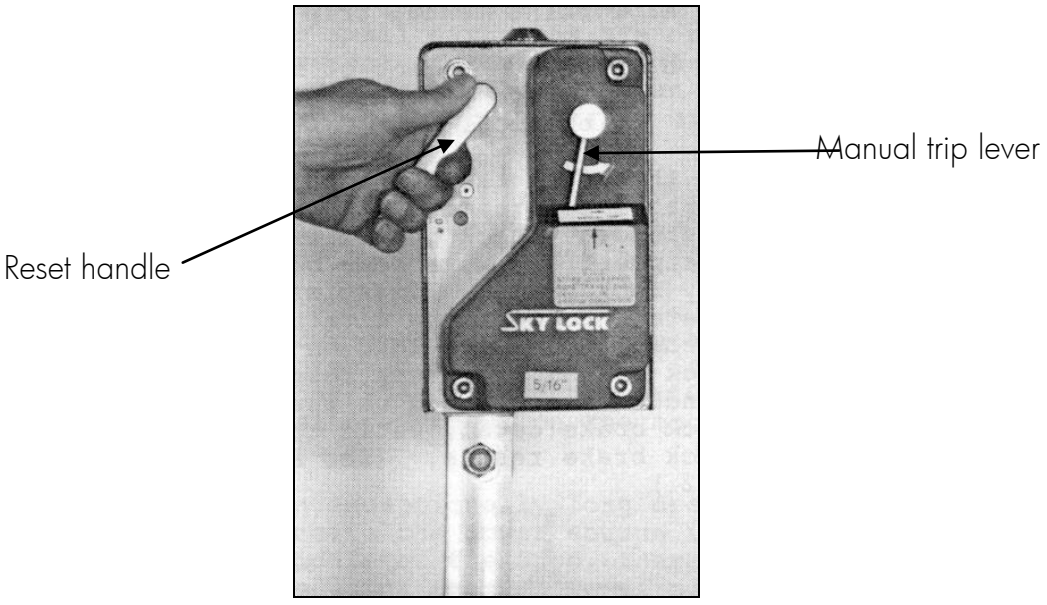


Fig.: 99000000-f12

Sky Lock, Walk through stirrup mounted (example)

Before passing the wire rope through the Sky Lock brake, the reset handle must be placed in the reset position. See figure below



After the wire rope has been passed through the Sky Lock brake, the operation of the brake must be inspected. See further on in this manual.

Operation

Should the SKY LOCK brake engage due to an overspeed condition, do not attempt to release or reset it. Instead, remove men from suspended equipment, and lower it to ground or raise it to roof by means other than the hoist. Then contact your nearest Sky Climber representative.

SKY LOCK brakes may also be engaged by:

- Turning manual trip lever (see figure above)
- Sudden movement of men on platform or repeated vibration

In the event the Sky Lock brake engages for reasons other than overspeed, check condition of equipment and wire rope below the Sky Lock brake. If satisfactory, operate hoist in up direction 5 to 10cm to relieve load on the Sky Lock brake, then turn reset handle as indicated on the Sky Lock brake decal, until the Sky Lock brake resets.)

Nameplate and Declaration of Conformity

Example of a nameplate: Sky Lock II 9mm

SKY LOCK II 9 mm
OVERSPEED FALL ARREST DEVICE
SKY CLIMBER
Manufacturer: N.V. Sky Climber Europe S.A.
Nijverheidsstr. 23 | 2570 Duffel | Belgium
+32 (0)3 887 81 20
WARNING:
USE ONLY 9 mm
STEEL WIRE ROPE
CE
Serial Number: XXXXXX
Date Production: XXXXXX
Working Load Limit: XXXX Kg
Tripping Speed: XXXX
Manual trip lever
Sky Lock will be engaged by:
a. An overspeed condition.
b. Turning manual trip lever.
c. Sudden movement of men on platform or repeated vibrations.
IMPORTANT
Should the Sky Lock engage due to an overspeed condition, do not reset until load has been removed from Sky Lock or tied off on alternate supporting rope. Return Sky Lock to Sky Climber for inspection prior to further use.
To reset Sky Lock, operate hoist in UP-direction – 8 cm to relieve load on Sky Lock, then turn reset lever in clockwise direction.
Reset lever
12009203

Example of a declaration of Conformity : Sky Lock II 9mm

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DECLARATION of CONFORMITY

(Machine Directive 2006/42/EEC, Art 12.3.b, Art. 1.1.c, Art. 5.1.e and annex II, sub 1.a)

N.V. SKY CLIMBER EUROPE S.A.
Nijverheidsstraat 23 – 2570 Duffel - Belgium

Herewith declares that the application :

Type and distinguishing mark :	SKY LOCK II 9 mm
Description :	overspeed fall arrest device
Serial number :	XXXXXX
Working Load Limit :	800 kg

- has been thoroughly examined and has successfully performed the quality tests.
- is intended to be incorporated into machinery or to be assembled with other machinery to constitute machinery covered by Machine Directive 2006/42/EEC.
- the following Technical standards and specifications have been used : European Standard EN1808 (Suspended Access Equipment with platform mounted hoists).
- the EC-Type examination according to Machine Directive 2006/42/EEC art. 12.3.b, is done by Notified Body:

AIB-VINCOTTE International
Diamant Building
Boulevard A. Reyerslaan 80
B-1030 Brussels

The number of the pending certificate is : **Z10-184- 170- A.**

This declaration is valid only if the product as described above, is used according to the Sky Climber User Manuals.

And furthermore declares that:

- each type of combination of this product as describe above, with other parts to constitute a complete suspended access equipment must be in accordance with the requirements of the EC Machinery Directive 2006/42/EEC.
- together with other Sky Climber products, this product is meant as a component of a suspended access equipment assembly as described in the Sky Climber User Manual. These described assemblies are CE products in conformity with the provisions of Machine Directive 2006/42/EEC.

Signature: Joost Bogaert
Title: Engineering Manager
Date : 22 December 2010

CERTIFICATE

CE

SAFETY SERVICE SOLUTIONS

Inspecting a Sky Lock overspeed device

WARNING: Failure to inspect and functionally check Sky Lock brake operation at the beginning of each work shift could result in serious injury or death.

The following inspection procedures are for the Sky Lock (with external trip knob, 25 m/min. tripping speed).

WARNING: If the Sky Lock overspeed brake fails any of the following inspections, it must be replaced at once.

Inspecting "trip" Performance of Mounted Sky Lock

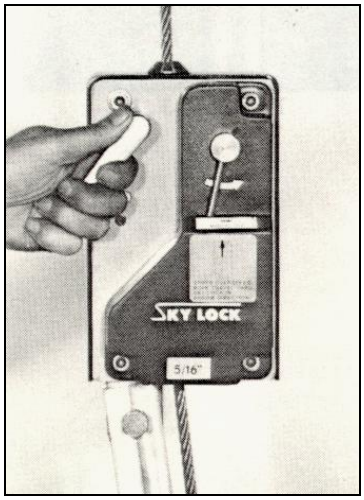
Use following procedure to test the Sky Lock brake prior to reeving.

1) Insert the end of a wire rope through the Sky Lock.
2) Support the wire rope and Sky Lock in a vertical position. Let the Sky Lock drop down the wire rope. The accelerating brake should trip the mechanism, causing it to lock onto the rope before the brake falls more than 10 cm.
3) Reset the Sky Lock brake and repeat this procedure two times. If the Sky Lock brake does not trip and lock onto the rope before falling 10 cm during any test, it must be replaced.

Use the following procedure to test the Sky Lock brake after reeving

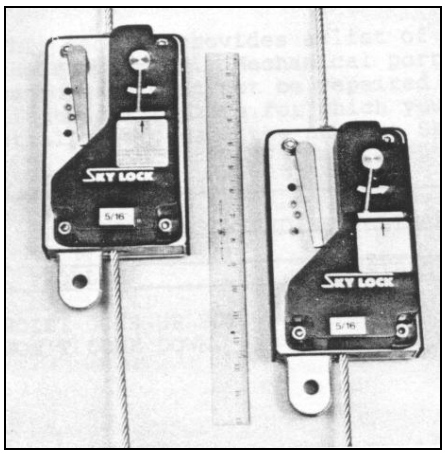
WARNING: Platform must be supported on a safe surface.

1) Make certain Sky Lock brake is properly set (See Figure)



2) Disengage the Sky Lock brake from the Sky Climber hoist or other platform attachment point by removing the attaching bolt from the lower Sky Lock fitting.

3) Raise the Sky Lock brake up the wire rope approximately 30 cm and release it (let it drop). The Sky Lock brake should trip and Lock onto the rope after a fall of not more than 10 cm.



4) Reattach the Sky Lock brake to the Sky Climber hoist by either:
   - Raising the hoist and platform by using power to a position where the attaching bolt can be inserted or,
   - Resetting the Sky Lock brake using the reset lever, and lowering it down to the hoist and inserting the attaching bolt.

5) Make sure attaching hardware is properly tightened.

Inspecting load support performance

1) Raise the platform +/- 10cm of the surface with the Sky Climber hoist.
2) Engage (trip) the Sky Lock brake onto the wire rope by activating the manual trip lever on the brake.
3) Operate the Sky Climber hoist in the "DOWN" direction. The system should not descend, because the Sky Lock brake will be locked onto the wire rope and supporting the system.
4) Operate the hoist in the "UP" direction approximately 5 cm to relieve the load from the Sky Lock brake.
5) Manually reset the Sky Lock fall arrest device.

WARNING: Do not attempt to adjust or repair the Sky lock brake. It is a precision device and must be handled carefully.

Maintenance

See section "Maintenance Procedures" in the Part list & Maintenance Manual of the Sky Lock type that you use.